

10/521943

DT01 Rec'd PCT/PCT 21 JAN 2005

AMENDMENT TO THE CLAIMS

Please amend the claims as follows:

1. (Original) A light emitting apparatus, comprising:
  - a light source section comprising a solid-state light emitting element;
  - a power supply section that supplies power to the light source section;
  - a reflection section that is disposed opposite to a light extraction surface of the light source section to reflect light emitted from the light source section; and
  - a heat radiation section that is disposed with a heat radiation width in a back direction of the light source section.
  
2. (Original) A light emitting apparatus, comprising:
  - a light source section comprising a solid-state light emitting element;
  - a power supply section that supplies power to the light source section;
  - a reflection section that is disposed opposite to a light extraction surface of the light source section to reflect light emitted from the light source section;
  - a heat radiation section that is disposed with a heat radiation width in a back direction of the light source section; and
  - a case in which the reflection section and the radiation section are placed and which externally radiates heat to be transferred from the heat radiation section.
  
3. (Currently Amended) The light emitting apparatus according to claim 2, wherein:  
the heat radiation section is of the comprises a same material as the case.

4. (Currently Amended) The light emitting apparatus according to claim 1 or 2, wherein:  
the light source section is packaged such that the solid-state light emitting element is sealed with a light transmitting material.

5. (Currently Amended) The light emitting apparatus according to claim 2 any one of claim 1 to 4, wherein:

~~the light source section comprises the solid-state light emitting element that is flip-chip mounted on a inorganic material board on which a conductive pattern is formed to supply power to the solid-state light emitting element, and the light source section is sealed with an inorganic seal material that has a thermal expansion coefficient nearly equal to that of the inorganic material board.~~

the light source section is packaged such that the solid-state light emitting element is sealed with a light transmitting material.

6. (Currently Amended) The light emitting apparatus according to claim 1 claim 5, wherein:

~~the inorganic seal material is of glass.~~

the light source section comprises the solid-state light emitting element that is flip-chip mounted on a inorganic material board on which a conductive pattern is formed to supply power to the solid-state light emitting element, and the light source section is sealed with an inorganic seal material that has a thermal expansion coefficient nearly equal to that of the inorganic material board.

7. (Currently Amended) The light emitting apparatus according to claim 5 or 6, wherein:  
~~the inorganic material board seals the light emitting element while bonding in chemical reaction to the inorganic seal material.~~  
the inorganic seal material comprises glass.

8. (Currently Amended) The light emitting apparatus according to ~~any one of claims 1 to 7~~ claim 6, wherein:

~~the solid-state light emitting element is sealed with the inorganic seal material with a refractive index of 1.55 or more.~~  
the inorganic material board seals the light emitting element while bonding in chemical reaction to the inorganic seal material.

9. (Currently Amended) The light emitting apparatus according to ~~claim 2 or 3~~ claim 1, wherein:

~~the case comprises a high reflectivity surface to reflect the light.~~  
the solid-state light emitting element is sealed with the inorganic seal material with a refractive index of 1.55 or more.

10. (Currently Amended) The light emitting apparatus according to claim 2 or 3, wherein:  
~~the case comprises a surface that is subjected to a finishing to increase its heat radiation area.~~  
the case comprises a high reflectivity surface to reflect the light.

11. (Currently Amended) The light emitting apparatus according to ~~any one of claims 1 to 10~~ claim 2, wherein:

~~the heat radiation section comprises a head radiation plate that comprises a high reflectivity surface to reflect the light.~~

the case comprises a surface that is subjected to a finishing to increase its heat radiation area.

12. The light emitting apparatus according to ~~any one of claims 1 to 11~~ claim 1, wherein:  
~~the heat radiation section comprises a heat radiation support that is of a high thermal conductivity material and transfers to the heat radiation section heat generated from the light source section, and heat radiation plate that transfers the heat through the heat radiation support.~~  
the heat radiation section comprises a heat radiation plate that comprises a high reflectivity surface to reflect the light.

13. (Currently Amended) A light emitting apparatus, comprising:  
~~a light source section comprising a solid-state light emitting element;~~  
~~a power supply section that supplies power to the light source section;~~  
~~a reflection section that is disposed opposite to a light extraction surface of the light source section to reflect light emitted from the light source section; and~~  
~~a heat radiation section that is disposed with a heat radiation width in a back direction of the light source section;~~  
~~wherein the power supply section is formed with a width in the back direction of the light~~

source section.

The light emitting apparatus according to claim 1, wherein:

the heat radiation section comprises a heat radiation support that comprises a high thermal conductivity material and transfers to the heat radiation section heat generated from the light source section, and a heat radiation plate that transfers the heat through the heat radiation support.

14. (Currently Amended) The light emitting apparatus according to any one of claims 1 to 13, wherein:

~~the power supply section comprises a metallic thin film and is disposed with a width in the back direction of the light source section and is integrated with the heat radiation section while being insulated from the heat radiation section.~~

A light emitting apparatus, comprising:

a light source section comprising a solid-state light emitting element;

a power supply section that supplies power to the light source section;

a reflection section that is disposed opposite to a light extraction surface of the light source section to reflect light emitted from the light source section; and

a heat radiation section that is disposed with a heat radiation width in a back direction of the light source section,

wherein the power supply section is formed with a width in the back direction of the light source section.

15. (Currently Amended) The light emitting apparatus according to ~~claim 14~~ claim 1, wherein:

~~the power supply section comprises a metallic thin film and is sandwiched through an insulator between plurality of heat radiation plates to compose the heat radiation section.~~  
~~disposed with a width in the back direction of the light source section and is integrated with the heat radiation section while being insulated from the heat radiation section.~~

16. (Currently Amended) The light emitting apparatus according to ~~any one of claims 1 to 15~~ claim 15, wherein:

~~a spectrum light with plurality of region wavelengths is radiated from the solid-state light emitting element or from the periphery of the solid-state light emitting element.~~  
~~the power supply section comprises a metallic thin film and is sandwiched through an insulator between a plurality of heat radiation plates to compose the heat radiation section.~~

17. (Currently Amended) The light emitting apparatus according to ~~claim 16~~ claim 1, wherein:

~~a phosphor is disposed on the periphery of the solid-state light emitting element.~~  
~~a spectrum light with plurality of region wavelengths is radiated from the solid-state light emitting element or from the periphery of the solid-state light emitting element.~~

18. (Currently Amended) The light emitting apparatus according to ~~any one of claims 1 to 17~~ claim 17, wherein:

~~the heat radiation section has the heat radiation width that is three times or more its thickness.~~

a phosphor is disposed on the periphery of the solid-state light emitting element.

19. (Currently Amended) The light emitting apparatus according to ~~any one of claims 1 to 18~~ claim 1, wherein:

~~the light source section including the solid-state light emitting element has a width that is within five times that of the solid-state light emitting element.~~

the heat radiation section has the heat radiation width that is three times or more its thickness.

20. (Currently Amended) The light emitting apparatus according to ~~any one of claims 1 to 18~~ claim 1, wherein:

~~the heat radiation section comprises a shape that protrudes toward a bottom of the reflection surface.~~

the light source section including the solid-state light emitting element has a width that is within five times that of the solid-state light emitting element.

21. (Currently Amended) The light emitting apparatus according to ~~any one of claims 1 to 20~~ claim 1, wherein:

~~the reflection surface opposite to the light source section comprises a solid angle of  $2\pi$  to  $3.4\pi$  strad.~~

the heat radiation section comprises a shape that protrudes toward a bottom of the reflection surface.

22. (Currently Amended) The light emitting apparatus according to ~~any one of claims 1 to 21~~ claim 1, wherein:

~~the light source section comprises a light source with a turn-on power of 1W or more.~~

the reflection surface opposite to the light source section comprises a solid angle of  $2\pi$  to  $3.4\pi$  strad.

23. (Currently Amended) The light emitting apparatus according to ~~any one of claims 1 to 13~~ claim 1, wherein:

~~the reflection section is of a resin material.~~

the light source section comprises a light source with a turn-on power of 1W or more.

24. (Currently Amended) The light emitting apparatus according to ~~any one of claims 1 to 22~~ claim 1, wherein:

~~the light source section comprises a plurality of solid-state light emitting elements.~~

the reflection section comprises a resin material.

25. (Currently Amended) The light emitting apparatus according to ~~any one of claims 1 to 24~~ claim 1, wherein:

~~the light emitting apparatus comprises a plurality of the light source sections, and a plurality of the reflection sections and the heat radiation sections corresponding to the plurality of the light source sections.~~

the light source section comprises a plurality of solid-state light emitting elements.

26. (Currently Amended) The light emitting apparatus according to ~~claim 25~~ claim 1, wherein:

~~the plurality of the light source sections generate a plurality of emission colors.~~

the light emitting apparatus comprises a plurality of the light source sections, and a plurality of the reflection sections and the heat radiation sections corresponding to the plurality of the light source sections.

27. (Currently Amended) The light emitting apparatus according to ~~claim 26~~ claim 1, wherein:

~~the plurality of the light source sections generate emission colors of R, G and B.~~

the plurality of the light source sections generate a plurality of emission colors.

28. (New) The light emitting apparatus according to claim 27, wherein:

the plurality of the light source sections generate emission colors of R, G and B.